

THE LEISURE HOUR

A FAMILY JOURNAL OF INSTRUCTION AND RECREATION.

"BEHOLD IN THESE WHAT LEISURE HOURS DEMAND.—AMUSEMENT AND TRUE KNOWLEDGE HAND IN HAND."—*Cowper*



A STRANGE INTRODUCTION.

ROGER KYFFIN'S WARD.

CHAPTER III.—THE HERO'S EARLY DAYS, AND A DESCRIPTION OF A LADY OF QUALITY.

ROGER KYFFIN heard of Major Tryon's death soon after it occurred. He was afraid that Fanny might be left badly off, and he considered how he could with the greatest delicacy assist her. He would not intrude on her grief, but he thought that he might employ some person in the neighbourhood who would

act as agent to take care that she was supplied with every comfort.

That evening he was travelling down in the mail coach to Lynderton. He knew his way to the cottage as well as anybody in the place.

Near it was a little inn, to which he had his carpet bag conveyed. Here he took up his abode. He felt a satisfaction in being near her, but was nervous lest by any means she should find out that he was in the neighbourhood. He soon discovered that Dr. Jessop drove by every day and visited the

cottage, and he resolved, therefore, to stop the doctor and introduce himself as a friend of Mrs. Tryon's family. If he found him a trustworthy and sensible person, he would employ him as his agent in affording the assistance he wished to render the widow. He saw him, and was satisfied that Dr. Jessop was just the person he hoped to find.

"I have had a long round of visits," said the worthy practitioner, "and would gladly put up my horse at the inn and talk the matter over with you."

They were soon seated together in the little parlour allotted to Mr. Kyffin. His wishes were easily explained. "My interesting patient will, I am sure, feel grateful for the sympathy and assistance of her unknown friend," said the doctor; "but to be frank with you, Mr. Kyffin, I fear she will not enjoy it for many years. I believe that her days are numbered—"

He stopped suddenly, observing Roger Kyffin's countenance.

"My dear sir," he exclaimed, "I was not aware how deeply I was wounding you, and yet, my friend, it is better to know the truth. You may yet prove a friend to her boy, and should she be taken away, the poor child will greatly need one."

It would be difficult to describe the feelings which agitated Roger Kyffin's kind heart. He had one consolation. He might, as the doctor suggested, prove a friend and guardian to the orphan boy. The kind doctor called every day to report on the health of his patient. He gladly undertook to do all in his power in carrying out Mr. Kyffin's wishes, and promised not to betray the donor of the money which was to be placed at Mrs. Tryon's disposal.

Roger Kyffin could with difficulty tear himself away from the neighbourhood. He received constant communications from Dr. Jessop, who sent him rather more favourable reports of Mrs. Tryon. Five years passed by—Mrs. Tryon's mother was dead. She had no wish to leave her little cottage. Where, indeed, could she go? Her only employment was that of watching over her little boy. During this time several changes had taken place in the neighbourhood. Sir Harcourt Tryon died. Though he must have been aware of his grandson's existence, he had never expressed any wish to see him. At length the mother caught cold. The effect was serious. Dr. Jessop became alarmed, and wrote an account of her state to Mr. Kyffin. She could no longer take Harry out to walk, and had therefore to send him under charge of a nursemaid.

One day he and his nurse were longer absent than usual. What could have kept them? The young mother went to the garden-gate several times, and looked anxiously along the road. She felt the wind very cold. Again she entered the house. Could she have mistaken the hour? The next time she threw a shawl over her shoulders, but the cold made her cough fearfully. At last she saw a female figure in the distance. It was Susan the nurse, but Harry was not with her. Mrs. Tryon had to support herself by the gate till the girl came up.

"Where is Harry? where is my child?" she exclaimed.

"I could not help it, ma'am, I did my best to prevent it," answered the nurse, crying.

Poor Fanny's heart sank within her; her knees trembled.

"Prevent what?" she exclaimed; "what has happened? where is my boy?"

"No harm has come to him, ma'am, though there might have been, but it is all right now," answered Susan. "We were going on, Master Harry skipping and playing in front of me, when I saw a carriage coming along the road very fast. I ran on to catch hold of him, but he darted away just under the horses' feet. I screamed out, and the coachman pulled up. An old lady was in the carriage, and putting her head out of the window she asked what was the matter? Seeing the little boy, she wanted to know whose child he was. When I told her, she ordered the footman to lift him into the carriage. She looked at his face as if she was reading a book, then she kissed him and sat him down by her side. I begged the lady to let me have him again, as I wanted to come home. 'No,' she said, 'go and tell your mistress that his grandmother has taken him with her, that she is pleased with his looks, and must take him for a short time.' I knew, ma'am, that you would be vexed, and I begged the lady again and again to let me have him, but she answered that he must go with her, and that it would be better for him in the end."

Poor Mrs. Tryon had been listening with breathless eagerness to this account of the nursemaid's. Leaning on the girl's arm, she tottered back to the house, scarcely knowing whether or not she ought to be thankful that the boy had been seen by his grandmother. One thing she knew, she longed to press him to her own bosom. She felt, however, weak and ill. While yet undecided how to act, Dr. Jessop's carriage drove up to the gate. As he entered the house, she was seized with a fit of coughing, followed by excessive weakness. As she was leaning back in the arm-chair, the doctor felt her pulse. As soon as she could speak she told him what had happened. He looked very grave.

"My dear madam," he said, "I am sorry that her ladyship has carried off the little boy. If you will give me authority, I will drive on and bring him back to you. An old friend of yours has come down to this neighbourhood, and he wishes to see Harry. He has heard that you are ill, and desires to know from your own lips your wishes with regard to your boy."

"What do you mean, doctor?" asked the dying lady, looking up with an inquiring glance at the doctor's face. "The child is so young that I should not wish to part from him for some years to come."

"My dear lady," said Dr. Jessop, solemnly; "the lives of all of us are in God's hands. You are suffering from a serious complaint. It would be cruel in me not to warn you that you are in considerable danger."

"Do you mean to say I'm going to die, doctor—that I must part from my boy?" gasped out poor Fanny, in a faint voice.

"I should wish you to be prepared, should it be God's will to call you away," answered the doctor, much moved. "If you will give authority to your devoted friend Mr. Roger Kyffin I am sure he will act the part of a parent to your boy. I expect him here this evening, and as he wishes to see Harry, I will drive over to Lady Tryon and request her ladyship to allow me to bring your boy back to you. Certainly in most cases a child's grandmother is a proper person to act as guardian, but though I attend Lady Tryon professionally when she is in the country, I am unable to express a satisfactory opinion as to her fitness for the task. I begged my friend Tom

Wallis, the solicitor at Lynderton, to ride over here with Mr. Kyffin; so that should you wish to place your boy under the legal protection of your old friend, you may be able to do so."

"Surely his grandmother is a proper person to take charge of Harry; though I have no cause to regard her with affection," said Fanny, in a faint voice, "yet I could with more confidence consign him to that kind and generous man, Mr. Kyffin; I will do therefore as he wishes, only requesting that the boy may be allowed to remain as much as possible during his childhood with his grandmother."

Poor Fanny! a lingering feeling of pride prompted this resolution. Far better would it have been, in all human probability, for the boy, had she committed him entirely to her faithful friend's care, and not mentioned Lady Tryon. The doctor knew too well that his patient had not many hours to live. He hurried off to Aylestone Hall, the residence of Lady Tryon. The old lady expressed herself delighted with the child, and was very unwilling to part with him. Indeed, though she was told of her daughter-in-law's dangerous state, she positively refused to give him up, unless the doctor promised to bring him back again. Harry was accordingly placed in the doctor's carriage, which drove rapidly back to Mrs. Tryon's cottage.

"I can give you but little hopes," said the doctor to Roger Kyffin, whom, in company with Mr. Wallis, he met at the cottage gate.

Roger Kyffin sighed deeply. The little boy flew towards his mother. She had scarcely strength to bend forward to meet him. The doctor held him while she pressed him to her bosom.

"May he come in?" asked the doctor.

"Yes," she whispered, "I should be glad to see him before I die; you were right, doctor, and kind to warn me."

Roger Kyffin entered the room, but his knees trembled, and he could scarcely command his voice. Fanny thanked him for all his kindness; "continue it," she said, "to this poor child."

The doctor signed to Mr. Wallis to come forward. He had brought writing materials. Fanny expressed her wish to place her child under Roger Kyffin's guardianship. She signed the paper. She evidently wished to say more, but her voice failed her. It was with difficulty she could gasp out the last words she had uttered. In vain the doctor administered a restorative. With her one arm flung round her boy, while Roger Kyffin held her other hand, her spirit took its departure.

Roger Kyffin would gladly have carried Harry off to London, but no sooner did Lady Tryon hear of the death of her neglected daughter-in-law, than, driving over to the cottage, she took Harry with her back to Aylestone Hall. She directed also that a proper funeral should be prepared; and at her request several distant members and connections of the family attended it. Thus Mrs. Tryon was laid to rest with as much pomp and ceremony as possible in Lynderton churchyard.

With a sad heart Roger Kyffin returned to London and devoted himself with even more than his usual assiduity to his mercantile duties.

Aylestone Hall was a red brick building, surrounded by a limited extent of garden and shrubbery, within half a mile of the town of Lynderton. The interior, for a country house, had a somewhat gloomy and

unpicturesque aspect. Young Harry felt depressed by the atmosphere, so different from the cheerful little cottage, with its flower-surrounded lawn, to which he had been accustomed. He was not drawn either to his grandmother, though she intended to be kind to him. She treated him indeed much as a child does a new plaything, constantly fondling it at first, and then casting it aside uncared for. Harry was also soon nauseated by the old lady's caresses. He had, too, a natural antipathy to musk, of which her garments were redolent.

Lady Tryon was a small woman with strongly marked features, decidedly forbidding at first sight, though she possessed the art of smiling, and making herself very agreeable to her equals. She could smile especially very sweetly when she had an object to gain, or wished to be particularly agreeable; but her countenance could also assume a very different aspect when she was angry. She had bright grey eyes, which seemed to look through and through the person to whom she was speaking, while her countenance, utterly devoid of colour, was wrinkled and puckered in a curious way. She always wore rouge, and was dressed in the height of fashion. She very soon discarded her widow's ugly cap, and the gayest of colours decked her shrivelled form, the waist almost close up under the arms, and the dress very low, a shawl being flung over her shoulders. She could laugh and enjoy a joke, but her voice was discordant, and even when she wished to be most courteous there was a want of sincerity in its tone. Lady Tryon had been maid of honour in her youth to a royal personage, and possessed a fund of anecdote about the Court, which was listened to with respectful delight by her country neighbours. She was supposed to have very literary tastes, and to have read every book in existence. The fact was that she scarcely ever looked into one, but she picked up a semblance of knowledge, and having a retentive memory was able to make the most of any information she obtained. In the same way she had got by heart a large supply of poetry, which she was very clever in quoting, and as her audience was not often very critical, any mistakes of which she might have been guilty were rarely discovered. Her chief talent was in letter-writing, and she kept up a constant epistolary correspondence with aristocratic friends. No one could more elegantly turn a compliment or express sympathy with sorrow and disappointment. She occasionally, too, penned a copy of verses. If there was not much originality in the lines, the words were well chosen and the metre correct. She described herself as being a warm friend and a bitter enemy. The latter she had undoubtedly proved herself on more than one occasion; but the warmth of her friendship depended rather upon the amount of advantage she was likely to gain by its exhibition than from any sensation of the heart. In fact, those who knew her best had reason to doubt whether she was possessed of that article. In reality, its temperature was, without variation, down at zero. Poor Sir Harcourt, a warm-hearted man, had discovered this fact before he had been very long united to her. She, however, managed from the first to rule him with a rod of iron, and to gain her own way in everything. Most fatally had she gained it in the management of her son, whom she had utterly ruined by her pernicious system of education. Sir Harcourt endeavoured to make all the excuses for her in his power.

"She is all mind!" he used to observe. "A delightful woman—such powers of conversation! We must not expect too much from people! She has a wonderful command of her feelings: never saw her excited in my life! A wonderful mind, a wonderful mind has Lady Tryon!"

Lady Tryon had, however, one passion. It absorbed her sufficiently to make her forget any annoyances. She was fond of play. She would sit up half the night at cards, and, cool and calculating, she generally managed to come off winner. Of late years she had not been so successful. Her mind was not so strong as it was, and all her powers of calculation had decreased. Still she retained the passion as strong as ever. In London she had no difficulty in gratifying it, but during her forced visits to the country she found few people willing to play with her. At first, her country neighbours were highly flattered at being invited to her house, but they soon found that they had to pay somewhat dear for the honour. Still her ladyship, while winning their money, was so agreeable, and smiled so sweetly, and spoke so softly, that like flies round the candle, they could not resist the temptation of frequenting her house. For some years she managed to rule the neighbourhood with a pretty high hand. There was only one person who refused to succumb to her blandishments, and of her she consequently stood not a little in awe. This person was an authoress, not unknown to fame. She had more than once detected the piracies of which Lady Tryon had been guilty in her poetical effusions, and could not resist, when her ladyship spoke of books, asking her in which review she had seen such and such remarks. Miss Bertrand was young, not pretty, certainly, but very genuine and agreeable, and possessed of a large amount of talent. She drew admirably, and her prose and poetical works were delightful. Lady Tryon looked upon her as a rival, and hated her accordingly.

Such was the grand-dame under whose care Harry Tryon was to be brought up. Dr. Jessop was not happy about the matter. He would far rather that the honest clerk had taken charge of the boy. He resolved, however, as far as he had the power, to counteract the injudicious system he discovered that Lady Tryon was pursuing. For this purpose he won the little fellow's affection, and as he was a constant visitor at the house in his official capacity, he was able to maintain his influence. When her ladyship went to town he induced her to allow Harry to come and stay with him, and on these occasions he never failed to invite Roger Kyffin down to pay him a visit. The worthy clerk's holidays were therefore always spent in the neighbourhood of Lynderton. The two kindly men on these occasions did their best to pluck out the ill weeds which had been growing up in Master Harry, while under his grandmother's care. It was, however, no easy task to root them out, and to sow good seed in their stead. Still, by their means Harry did learn the difference between good and evil, which, if left to Lady Tryon's instructions, he certainly would never have done. He also became very much attached to the old doctor and to his younger friend, and would take advice from them, which he would receive from no one else. He grew up a fine, manly boy, with many right and honourable feelings; and though his mental powers might not have been of a very high order, he had fair talents, and physically

his development was very perfect. Lady Tryon herself began to teach him to read, and as he showed a considerable aptitude for acquiring instruction, and gave her no trouble, she continued the process till he was able to read without difficulty by himself. She put all sorts of books into his hands, from which his brain extracted a strange jumble of ideas. He certainly acquired very good manners from his grandmother, and to the surprise of the neighbourhood, when he was ten years old there was scarcely a better behaved boy in Lynderton. Dr. Jessop then suggested that he should be sent to Winchester School, or some other place of public instruction. Lady Tryon would not hear of this, though she consented that he should attend the grammar school at Lynderton. For this the worthy doctor was not sorry.

"I can look after him the better," he said to himself, "and go on with the process of pulling up the weeds during her ladyship's absence." Harry's holidays were generally spent in the country. Twice, however, his grandmother had him up to London in the winter. On these occasions, Mr. Kyffin got leave from her ladyship to have him to stay with him part of the time. Every spare moment of the day was devoted to the lad. He took him to all the sights of London, and in the evenings contrived for him variety of amusement. Harry became more and more attached to Mr. Kyffin, and more ready to listen to his advice, and more anxious to please him. Thus the boy grew on, gaining mental and physical strength, though without forming many associates of his own rank in life. His manners were very good, and his tastes were refined, and this prevented him associating with the ordinary run of boys at the grammar school.

Two Old French Pictures.

I.

JOAN OF ARC.



THE fire is lit, the faggots piled;

The English soldiers in the square

Wonder to see her soft and fair,

A shepherd girl, with features mild.

Within, the judge is stern and rude;

She answers him with Yea and Nay;

She tells him, in her simple way,

Her visions and her solitude.

She has nothing more to dream or do,

For France is free, the English fled,

The crown is on her monarch's head;

She can die like a warrior-maiden too.

The angels' ladder comes to all;
It came to her, a stair of flame:
She heard the judges read her name,
And went out from the judgment hall;

And passed into the market-place,
And seemed to feel the breezes mild
That played with her, a little child,
Come blowing back upon her face;

And seemed to fall into a sleep,
And live again the olden days,
And wander through the forest ways,
And gather flowers, and tend her sheep;

And wrapped her in the robe of fire,
And did not hear the soldiers' jeers
For the birds singing in her ears,
Like singing-children in a choir;

And did not feel the scorching heat
Of that fierce road she had to pass,
Because the flowers and dewy grass
Seemed crushing up about her feet;

And met, with shining eyes and calm,
The flashing of the English lance,
Because that in her dying trance
It seemed to her a bough of palm;

And called upon her Lord in prayer,
And trembled for a little space,
Or seemed to tremble, as her face
Gleamed upwards from the fiery air;

And crossed her arms upon her breast,
And caught the sparkle of her crown,
And saw the angels bending down,
And floated up among the rest.

II.

MARIE ANTOINETTE.

SHE is not robed or riding as a queen,
And yet the wretched rabble howl and stare,
Roused by the stony sorrow of her mien,
The utter majesty of her despair.

The Austrian! who, alas! would know her now,
Of all that nurtured her in pomp and pride,
Cradled in purple, empire on her brow,
Theresa's daughter, and the Dauphin's bride?

Not her own mother,—though that noble head,
Those proudly gentle features, well might stir
Once more the knights who drew their swords, and
said

She was their king, and they would die for her!

It is too young a head to be so white;
In eyes so fair, the tears should fall, not freeze.
Oh, who can dream the terror of the night
That charged her golden head with snows like
these!

Last night she sat among the Temple glooms,
Haunted by ghosts of all her happy schemes,
And passed, a bride, through all her palace-rooms,
And knelt, a mother, by her children's dreams.

Ah me! the very butchers have not chid
The slender mourning she has tried to wear,
With which a peasant mother might have hid
The silver sorrow of her widowed hair.

Amid the cursing, is there none to bless?
Not one to give her greeting or good-bye?
Oh, yield for pity of her helplessness,
And give her place to pass, and room to die!

A little child, upon his mother's arm,
With flower-filled hands, sat high among the
crowd;
He flung them forth, in all their dewy charm,
And "*Vive la Reine!*" he shouted, long and loud.

Quick turned the startled, queenly heart to hear;
She could have borne unmoved a ruffian's stroke;
She had passed the Tuileries without a tear,
But now the spell of grief and stupor broke.

The white lips quiver that would fain have kissed,
The sunk and faded eyes are brimming o'er;
God's blessing on thee, little Royalist,—
Those tears are sweet, and she will shed no more.

M. CARMICHAEL.

MY AUTOBIOGRAPHY:

INCIDENTAL NOTES AND PERSONAL RECOLLECTIONS.

BY JOHN TIMBS.

X.—HONE—RETIREMENT OF SIR RICHARD PHILLIPS—
BRIGHTON REMINISCENCES.

ABOUT this time I saw much of Hone, who was then preparing for the publication, in weekly numbers, of his "*Everyday Book*," one of the most attractive and original works of its class ever published. I had the *entrée* of his study, and well remember the exultation with which he placed in my hands the *wet* first number of the "*Everyday Book*;" when not satisfied with my good opinion of it, he replied, rather tartly, "*But I want to know what you do not like in it.*" I suggested, among other things, the *Twelve Sonnets on the Months*, by Spenser, for which Samuel Williams designed and engraved allegorical heads. I selected old prints for Hone, and gave him like small services; but when he asked me to wade through the four-volume index to the "*Gentleman's Magazine*" and mark suitable subjects for his work, I halted. Its sale was large; "but his family had now increased to ten children, and he again got into difficulties, the end of which was that he was arrested by a creditor, and thrown into the King's Bench prison. Here he remained for about three years, during which time he finished his '*Everyday Book*,' in two volumes, and began and finished his '*Table Book*' and '*Year Book*,' each in one volume." (Memoir, "*Gentleman's Magazine*," Jan., 1843.)

Southey's eulogium of the "*Everyday Book*," which appeared in the "*Times*" journal, came too late to

benefit the author commercially. The success of Hone's book lay in the homely or vernacular character of its contents and its originality. Those who have followed in its wake with better and more copious materials have not equally succeeded; through their attempted refinement, where no refinement was required, and where the substitution of one quality for another was not likely to be attended with corresponding improvement. Hone's description of the Bartholomew Fair of his time will best illustrate my meaning. He has described the fair with the minuteness of Dutch painting. He visited the several sights and shows, accompanied by Samuel Williams, the very clever draughtsman and engraver, by whom the illustrations were executed. Mr. Henry Morley's "Memoirs of the Fair," 1858, is a most laborious work, with some original ideas, but it is over-weighted.

Hone is now considered by most persons to have been a warm-hearted but mild-tempered man, much misconceived by those to whom he was known only through his parodies, which he probably produced in mere thoughtlessness and levity of heart; and, from published accounts of him, it is evident that the unworldliness of his nature was such as is rarely met with. This estimate will, by many readers, be considered a lenient one, yet great allowance must be made in a life so chequered with vicissitudes as was that of William Hone. He was subject to meditative moods, in one of which I last saw him gazing at one of the polished tables of the Chapter Coffee-house.

A correspondent of "Notes and Queries," No. 86, states: "I know (from Hone's own communication, shortly after the memorable trials) he was so affected by the celebrated Parodies being charged as 'blasphemous,' that he immediately stopped the sale of them; that, though money was then of some consequence to him, he refused tempting offers for copies; and that he did so, because he declared he would rather suffer any privations than be considered as having sought to revile the religion of his country, or do aught to injure Christianity, which he deemed to be the hope of all, and the poor man's charter. In making these observations, he emphatically placed his hand on a Bible which lay upon my table." Hone was greatly assisted in his compilations by his son-in-law, Jacob Henry Burn, who died February 10, 1870, in his 76th year. His chief study was numismatics, and his Catalogue of the Beaufoy Collection of the Coins and Tokens of the Taverns and Public Buildings of London is very carefully compiled. He also wrote an Essay on the Coins of the Roettiers; and an Account of Early Newspapers, which he presented to the University of Oxford, and which is more to be relied on than the published newspaper histories generally.

In the year 1823, after a life devoted to the diffusion of knowledge, and after writing, editing, and supervising innumerable books tending to make the next generation wiser than the last, Sir Richard Phillips disposed of a third share of his literary property, and retired on a moderate competency to Brighton, hoping there to pass the evening of his life in ease, or at least in pursuits of comparative leisure. At this time he superintended the completion of the publication of a collection of "Celebrated Trials and Remarkable Cases of Criminal Jurisprudence" during the last four hundred years, or from Lord Cobham, in 1418, to John Thurtell and Henry Fauntleroy, in 1824. The work was in part

compiled by Mr. George Olaus Borrow, afterwards known as the author of the "Zincali; or, an Account of the Gipsies in Spain." The first-named was a work of much detail, and requiring great research. It extended to six volumes, illustrated with curious portraits and other prints; and its execution scarcely realised the expectations of its projector. Next appeared a noble volume of practical mechanical science, called the "Operative Mechanic," planned under the auspices of Dr. Birkbeck, and executed by Mr. John Nicholson, well known in the world of science. Towards the end of 1825 was announced "A Library for the People," consisting of treatises on every popular branch of science, to be published under the superintendence of "The Society for Diffusing Useful Knowledge," this being the first announcement of an association with that title. The Address of the Society I wrote from the dictation of Sir Richard Phillips, at Brighton, subject to the approval of Dr. Birkbeck. The first number of the "Library for the People" (Astronomy, by Robert Mudie) appeared early in 1826; but few numbers followed, and these neither satisfied the projectors of the series nor the public. Meanwhile, a committee of gentlemen, with Mr. Brougham as their chairman, commenced the publication of the series of treatises entitled the "Library of Useful Knowledge," by a Society for the Diffusion of Useful Knowledge. Upon this, Dr. Birkbeck withdrew from the committee, and I do not find his name again upon the list until the year 1841. But he contributed freely to scientific publications; and I remember seeing a portion of a lengthy treatise upon Anatomy, which he had written specially to assist the printer of a Cyclopædia he had projected, though he was then struggling with the world. As a man, Dr. Birkbeck was simple, unassuming, and artless in his manner; of unbounded benevolence and inflexible integrity. "The panegyric will wear well, for it has been nobly earned." He died on the 1st of December, 1841, the eighteenth anniversary of the establishment of the first Mechanics' Institution in London.

In 1825 I assisted Sir Richard Phillips in producing "A Popular Dictionary of Facts and Knowledge," with the *nom-de-plume* of the Rev. S. Barrow. It is a closely-printed volume of some 240 pages, in double columns, and with several hundred engravings. It is, indeed, a volume of Definitions and Facts, sometimes twenty-five in a column, and it is explained in the preface that in comparison with large dictionaries of knowledge it is like a landscape viewed through the wrong end of the telescope; yet it is not abridged from any former work, was *originally written throughout*, a circumstance which has rarely attended other dictionaries; while so much important information on every subject could not otherwise have been compressed within the compass of so small a volume. They who are apt to undervalue the labour of compilation, rightly understood, should remember that "condensation is the result of time and experience, which reject what is no longer essential." But the labour of producing the above dictionary was lightened by many a laugh at the definitions of predecessors. The sale of the work was large, but it was kept out of the market for a few years by a *contretemps*; in the meantime an imitation appeared, containing such information as the pelican feeding its young with blood from its breast, and other long exploded errors.

Sir Richard was indefatigable in his attempts to make converts to his "Anti-Newtonian Philosophy." One fine morning he presented himself to Baron

Maseres, in the library of his mansion at Reigate: "I am come to talk over my favourite subject," he said (it was to overturn the universe!) "I am happy to see you," replied the Baron; "but before we commence I must ask you if you consider yourself proficient in mathematics?" The Anti-Newtonian was dumbfounded. "Then," resumed the Baron, "it would be unprofitable for us to begin;" and passed to a more genial topic. Baron Maseres has left behind him a celebrity, arising partly from his own writings and partly from the munificence with which he devoted a portion of his income to reprinting such works as he thought useful, either in illustration of mathematical history or that of his own country. He died May 19, 1824, at Reigate, in the ninety-third year of his age. He is understood to have bequeathed a large portion of his fortune to Dr. Fellows in testimony of his admiration of his having written many of the answers to the addresses presented to Caroline, Queen of George IV. Dr. Fellows was a Liberal in politics, and contributed largely towards establishing the "British Press" daily newspaper. The remains of the Baron rest in a vault in Reigate churchyard; upon the tomb over which Dr. Fellows has inscribed an epitaph in elegant Latinity, terminating thus: "Vale, vir optime! Amice, vale, carissime, et siquæ rerum humanarum tibi sit adhuc conscientia, monumentum quod in tui memoriam, tui etiam in mortuis observantissimus Robertus Fellows ponendum curavit, solita benevolentia tueraris." On Sundays, often have I seen the venerable Baron, bent with age, advancing up the nave of Reigate church: he testified his religious sincerity by making an endowment for an afternoon sermon to be preached on Sundays, with this proviso, that, in case of non-observance of the bequest, the endowment should be given in bread to the poor. The chancels of the church, with their faded pomp of effigied monuments, hatchments, and armorial glass, have little attraction compared with this wisdom-tempered memorial.

In the summer of 1825, when Mr. Moore was just finishing his "Life of Sheridan," he received from Mr. Ironmonger, through Sir Richard Phillips, an intimation that he possessed certain letters and papers of Sheridan, which he offered to place at Mr. Moore's disposal. Sir Richard accordingly arranged their meeting at Brighton, but, on the morning before the day fixed, Mr. Ironmonger was compelled to leave for London, on some "important legal business," and could not return in time to keep his appointment. These were not railway or telegraph times, and Mr. Moore came unwittingly to Brighton, where Sir Richard received him hospitably, and the poet sang his own "Melodies," notwithstanding his disappointment. This, however, was not concealed in Moore's "Diary," edited by Lord John Russell, but some querulous remarks appear, which practised editorial taste would have omitted. Moore was the friend and guest of Phillips, who had more sense than to make a lion of him. (See "Diary," vol. iv., pp. 296-7.)

It is more than sixty years since I first visited Brighton, and was told to look out for a large green field as I neared the sea by the London road; hence my recollections of the place—the Daphne of London—are of patriarchal character. I do not, however, aspire to clearing up its aboriginal history, nor claim acquaintance with Brighthelm, the Saxon bishop after whom the town is named. The Sussex coast

was continually harassed by threats of French invasion, as in 1515 and 1545, and again in 1586, on which occasion French fleets rode in the offing, and in one instance effected a landing; and here, after the battle of Worcester, and after lying concealed at a farm at Ovingdean, Charles II took ship, and fled to Normandy. By this I am reminded of an odd anecdote, related by the once famous chronicler, Sir Richard Baker; it may be a new use of an old saying. When Charles II was on his passage from Brighthelmstone to Dieppe, as above related, the King, sitting on the deck and directing the course, or, as they call it, "coursing the ship," one of the mariners blowing tobacco in the royal face, the master bade him go farther off the gentleman, who, murmuring, unwittingly replied that "a cat might look upon a king."

The discovery of Roman urns, and coins, and Roman glass, favours the conjecture that the town was the Portus Adurni of the Romans, which Selden has placed at Aldrington, two miles west of Brighton. But the Flemings first gave importance to the fishery. Its first fame as a bathing-place was established by Dr. Russell, whose mansion I recollect upon the site of the Albion Hotel. The Thrales, Dr. Johnson, and Madame D'Arblay figure in the early fashion of the place. It was adopted by George IV, then Prince of Wales, as his summer residence, and he, in 1784, laid the foundation of the Marine Pavilion, which Nash, within recollection, transformed into groups of domes, minarets, and pinnacles; these, with the vast glazed dome, 250 feet circumference, of the royal stables, which cost £70,000, became the nucleus of modern Brighton. Well do I remember "the Battery" as almost the western verge of the town; where a quiet hotel or two, and a bathing establishment, reminded folks that they were still in Brighton; and the solitary villa of the Countess St. Antonio, a kind of Italianised cottage, with two wings, just kept the fashion of the place in mind, as many a time and oft have I strolled along the rough road to Shoreham, strewn with the flowers of hoar antiquity. Kemp Town I remember, in its infancy, when only on paper; and Captain Browne's chain pier, rewarded by King William IV with knighthood. The great sea wall, carried down three feet into the chalk rock, and built with concrete of grey lime, mortar, and shingle, is another wonder: its extreme height is sixty feet, thickness at base twenty-three feet; total cost, £100,000. No place in our great country has presented such wonderful changes and creations as magnificent Brighton; its entire sea frontage extending three miles in length—of squares, terraces, crescents, and esplanades, etc. As visitors approached the town, they were formerly pelted with cards by bathers in huge blue gowns, of whom Martha Gunn was long the representative. This patriarchal lady gave me my first dip into the sea; Dr. Wigan, who wrote "The Three Climates of Brighton," having a few years previously ushered me into existence.

Although the Brighton coaches were long celebrated as the best appointed in the world—with "a horse a mile"—a railway was at length found indispensable (on which upwards of 5,000 men were employed), and just thirty years ago it was completed, at the cost of two millions and a half of money: by it we drop down to the coast whereon lies Brighton, embosomed and reposing in the lap of luxury. Beyond is the swelling sea, an object of such grandeur

as to dwarf the richness with which art has fringed the rocky cliffs and shingled shores. Less than a century since, there were only ten houses upon the western side of the Steyne, which resembled a common field, the only buildings on the eastern verge being a shed, known as "the Library," and at a short distance a dove-cote of an orchestra, wherein music was played in fine weather.

How often have I climbed the heights about this marine metropolis, noting the changes of some sixty years in its aspect! The old life of the place appears crushed by its magnificence. Here is the Grand Parade, but where are the military bands, the enjoyment of the Steyne, and the chase of the *Melantha vulgaris*; the libraries, with their gay bevy of visitors; and the singers; and the pony and donkey ride over the downs; and the cricket-matches; the stroll along the seashore; or a gipsy or two to whisper nonsense to Brighton belles; or a book to read upon the beach? Many a time, when I have wooed the Brighton climate to recruit a frame wasted with overwork, I have missed the scenes and recreations of the olden time, though doubtless new amusements, in keeping with the overgrown town, have taken their place.

A word or two about the Dyke. "Its unearthly appearance, if we take the trouble of descending into it, has well procured for it a supernatural similitude, and justifies the tradition that the Evil One dug it to let in the sea, and deluge the country, envying the numerous churches of the Wealds. But the plan was disconcerted—so the vulgar superstition runs—by an old woman, who, being disturbed from her sleep by the noise of the work, peeped out of her window, and recognising the infernal agent, had the presence of mind to hold up a candle, which he mistook for the rising sun, and beat a hasty retreat" ("Quarterly Review"), as old Aubrey would have said, "with a most melodious twang."

In his retirement at Brighton, Sir Richard Phillips commenced writing his Autobiography, in which he made considerable progress; but, from circumstances which need not here be explained, this ms. was destroyed—at least, such is my belief.

In the years 1825 and 1826, a period of social panic and sad disaster, Sir Richard suffered his full share in the general calamity. He tells us that he hastened to London, and found it a Pandemonium. Several opulent banks were run down by the public frenzy in one day, and commercial houses of established credit stopped payment by scores. The panic spread over the nation, and the stoppage of fourscore country banking establishments ruined or paralysed the active generation of British traders, agriculturists, and manufacturers. He proceeded to the Bank of England, and suggested two measures to its directors:—1st, that they should formally guarantee any London bank run upon, as the certain means of stopping the run, and rendering their guarantee harmless; and, 2nd, that the discounts should be open for a week to all applicants who presented good and approved bills. He wrote to the minister, and suggested that exchequer bills, of limited amounts, should be issued for notes of three housekeeping traders at three months, and of four, or more, at longer dates. The salvation of commercial credit appeared to him worth the hazard of half a million. The die, however, was cast, and, strange to relate, it appeared to him that an experiment of policy was making. Two banking-houses with which Sir Richard was connected stopped

on the same day; and, to complete his disaster, the agent to whom he had confided the sale of his literary property was involved, at the same hour, in the common ruin. Ease and domestic comforts were thus, as by the wand of enchantment, exchanged for anxiety and sorrow; and the luxury of doing good ceased to be indulged as in more prosperous days.

Phillips used to relate some of the false estimates of success which he had made as a publisher: he stated that he had rejected the offer of Lord Byron's early poems; that the copyright of Bloomfield's "Farmer's Boy" was offered to him for the complement of a dozen copies, but was rejected; that the novel of "Waverley" was offered to him in vain for £25 or £30; and that Barry O'Meara's "Napoleon in Exile" was similarly declined, though several high-priced editions were rapidly sold.

In the midst of this turmoil, Sir Richard's zeal did not fail, and in 1826 we find him in offices situated in the very maelstrom of the metropolis, issuing proposals for publishing a new daily evening paper, to be called the "Universal Gazette," to appear in the course of April or May. He was then in his fifty-eighth year, but possessing all the vigour and practical activity of a man of five-and-forty.

In the autumn of 1826, I resolved to visit Paris, soon after which I received from Sir Richard Phillips the following very interesting letter, in reply to a request for an introduction to the illustrious Cuvier:—

"74, St. Paul's Churchyard, September 19.

"Dear Timbs,—M. Jullien is a host of friends in himself, and deeply connected with education and all the societies. Show him this letter, and he can serve you in that way better than Cuvier, or any one else; and I am fully persuaded he will not be dishonoured by serving you.

"Count Lanjunais is also one of the most friendly of men, as is Count La Borde, both Peers of France, and Members of the Institute, and known to me in friendly relations.

"M. L'Abbé Gregoire will also receive you well on my account, and serve you. All of them will enjoy your 'Laconics;' and I will, by first opportunity, send Gregoire my 'Social Philosophy,' and you must borrow one for him. It was for such men as these that I wrote the book, not for the mercenary scribblers of my own country. * * * * *

"How superior is the profession of letters in France to its condition in England; there it is for glory, here it is for pelf!

"I would write to Cuvier, and he knows me; but he is a cold man, *i.e.*, colder than other Frenchmen; and I am persuaded that the warm-hearted Jullien, the universal philanthropist, will do all you want.

"See Mr. Ardant. If he would translate my book, I would send him much new matter, some on points which would not suit our population. Point out to me the means of sending free, that I may enclose a copy to Gregoire the Great; not Pope G. the Great, but *Philosopher Gregory the Great; Vive Gregoire.*

"Make my devoted respects to M. Jullien. Count Laysterie knows me, and is a great man at the Societies of Education.

"Thank you about the Bourbons.

"I am, truly, etc.,

"R. PHILLIPS.

"I am specially anxious about the translation, and I wish to see a full article in Jullien's Review (*Encyclopedique*)."



THE SICK DOLL.

(From a painting by P. E. Frère, in the International Exhibition.)

SKETCHES OF THE GEOLOGICAL PERIODS AS THEY APPEAR IN 1871.

BY J. W. DAWSON, LL.D., F.R.S., PRINCIPAL OF MCGILL COLLEGE, MONTREAL.

XI.—THE PERMIAN AGE (*continued*).

BUT we must reserve some space for a few remarks on the progress and termination of the Palæozoic as a whole, and on the place which it occupies in the world's history. These remarks we may group around the central question, What is the meaning or value of an age or period in the history of the earth, as these terms are understood by geologists? In most geological books terms referring to time are employed very loosely. Period, epoch, age, system, series, formation, and similar terms, are used or abused in a manner which only the indefiniteness of our conceptions can excuse.

A great American geologist* has made an attempt to remedy this by attaching definite values to such words as those above mentioned. In his system the greater divisions of the history were "Times:" thus the Eozoic was a time and the Palæozoic was a time. The larger divisions of the times are "Ages:" thus the Lower and Upper Silurian, the Devonian, and the Carboniferous are ages, which are equivalent in the main to what English geologists call Systems of Formations. Ages again may be divided into "Periods:" thus, in the Upper Silurian, the Ludlow of England, or Lower Helderberg of America, would constitute a period. These periods may again be divided into "Epochs," which are equivalent to what English geologists call Formations, a term referring not directly to the time elapsed, but to the work done in it. Now this mode of regarding geological time introduces many thoughts as to the nature of our chronology and matters relating to it. A "time" in geology is an extremely long time, and the Palæozoic was perhaps the longest of the whole. By the close of the Palæozoic nine-tenths of all the rocks we know in the earth's crust were formed. At least this is the case if we reckon mere thickness. For aught that we know, the Eozoic time may have accumulated as much rock as the Palæozoic; but leaving this out of the question, the rocks of the Palæozoic are vastly thicker than those of the Mesozoic and Cainozoic united. Thus the earth's history seems to have dragged slowly in its earlier stages, or to have become accelerated in its later times. To place it in another point of view, life-changes were greater relatively to merely physical changes in the later than in the earlier times.

The same law seems to have obtained within the Palæozoic time itself. Its older periods, as the Cambrian and Lower Silurian, present immense thicknesses of rock with little changes in life. Its later periods, the Carboniferous and Permian, have greater life-revolutions relatively to less thickness of deposits. This again was evidently related to the growing complexity and variety of geographical conditions, which went on increasing all the way up to the Permian, when they attained their maximum for the Palæozoic time.

Again, each age was signalised, over the two great continental plateaus, by a like series of elevations and depressions. We may regard the Lower Silurian, the Upper Silurian, the Devonian, the Carboniferous, and Permian, as each of them a distinct age. Each of these began with physical

disturbances and coarse shallow-water deposits. In each this was succeeded by subsidence and by a sea area tenanted by corals and shell-fishes. In each case this was followed by a re-elevation, leading to a second but slow and partial subsidence, to be followed by the great re-elevation preparatory to the next period. Thus we have throughout the Palæozoic a series of cycles of physical change which we may liken to gigantic pulsations of the thick hide of mother earth. The final catastrophe of the Permian collapse was quite different in kind from these pulsations as well as much greater in degree. The Cambrian or Primordial does not apparently present a perfect cycle of this kind, perhaps because in that early period the continental plateaus were not yet definitely formed, and thus its beds are rather portions of the general oceanic deposit. In this respect it is analogous in geological relations to the chalk formation of a later age, though very different in material. The Cambrian may, however, yet vindicate its claim to be regarded as a definite cycle; and since the publication of No. 3 of this series I have been reminded that I did not give sufficient prominence in that article to the recent discoveries of Hicks in North Wales, which have proved the existence of a rich marine fauna far down in the Cambrian. It is also to be observed that the peculiar character of the Cambrian, as an ocean bottom rather than a continental plateau, has formed an important element in the difficulties in establishing it as a distinct group; just as a similar difficulty in the case of the chalk has led to a recent controversy about the continuance of the conditions of that period into modern times.

But in each of the great successive heaves or pulsations of the Palæozoic earth, there was a growing balance in favour of the land as compared with the water. In each successive movement more and more elevated land was thrown up, until the Permian flexures finally fixed the forms of our continents. This may be made evident to the eye in a series of curves, as in the following diagram, in which I have endeavoured to show the recurrence of similar conditions in each of the great periods of the Palæozoic, and thus their equivalency to each other as cycles of the earth's history.

There is thus in these great continental changes a law of recurrence and a law of progress; but as to the efficient causes of the phenomena we have as yet little information. It seems that original fractures and shrinkages of the crust were concerned in forming the continental areas at first. Once formed, unequal burdening of the earth's still plastic mass by deposits of sediment in the waters, and unequal expansion by the heating and crystallisation of immense thicknesses of the sediment, may have done the rest; but the results are surprisingly regular to be produced by such causes. We shall also find that similar cycles can be observed in the geological ages which succeeded the Palæozoic. Geologists have hitherto for the most part been content to assign these movements to causes purely terrestrial; but it is difficult to avoid the suspicion that the succession of geological cycles must have depended on some recurring astronomical force tending to cause the weaker parts of

* Dana.

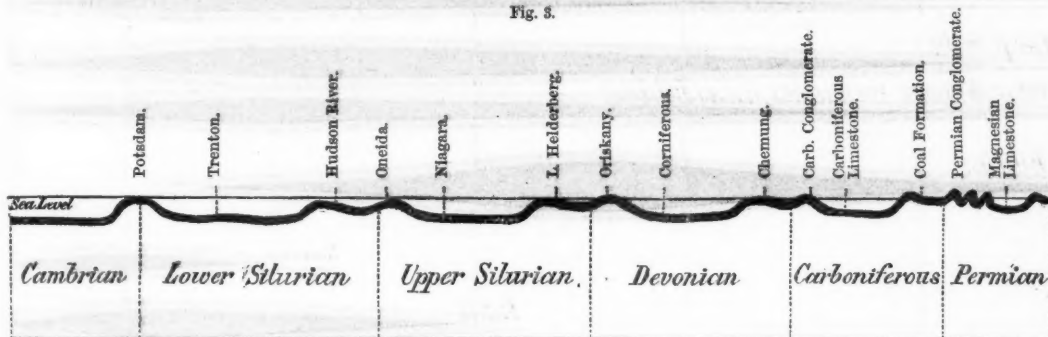
the earth's crust alternately to rise and subside at regular intervals of time. Herschel, Adh  mar, and more recently Croll, have directed attention to astronomical cycles supposed to have important influences on the temperature of the earth. Whether these or other changes may have acted on the equilibrium of its crust is a question well worthy of attention, as its solution might give us an astronomical measure of geological time. This question, however, the geologist must refer to the astronomer.

There are two notes of caution which must here be given to the reader. First, it is not intended to apply the doctrine of continental oscillations to the great oceanic areas. Whether they became shallower or deeper, their conditions would be different from those which occurred in the great shallow plateaus, and these conditions are little known to us. Further, throughout the Pal  zoic period, the oscillations do

former article, to give a restoration of one of the curious creatures last mentioned, the Orthoceratites; but on attempting this, with the idea that, as usually supposed, they were straight Nautili, it appeared that the narrow aperture, the small outer chamber, the thin outer wall, often apparently only membranous, and the large siphuncle, would scarcely admit of this; and I finished by representing it as something like a modern squid; perhaps wrongly, but it was evidently somewhere between them and the Nautili.

Secondly, these synthetic types often belonged to the upper part of a lower group, or to the lower part of an upper group. Hence in one point of view they may be regarded as of high grade, in another as of low grade, and they are often large in size or in vegetative development.* From this law have arisen many controversies about the grade and classification of the Pal  zoic animals and plants.

Fig. 3.



CURVES SHOWING THE SUCCESSIVE ELEVATIONS AND DEPRESSIONS OF THE AMERICAN CONTINENT, IN THE SEVERAL CYCLES OF THE PAL  ZOIC TIME.

not seem to have been sufficient to reverse the positions of the oceans and continents. Secondly, it is not meant to affirm that the great Permian plications were so widespread in their effects as to produce a universal destruction of life. On the contrary, after they had occurred, remnants of the Carboniferous fauna still flourished even on the surfaces of the continents, and possibly the inhabitants of the deep ocean were little affected by these great movements. True it is that the life of the Pal  zoic terminates with the Permian, but not by a great and cataclysmic overthrow.

We know something at least of the general laws of continental oscillations during the Pal  zoic. Do we know anything of law in the case of life? The question raises so many and diverse considerations that it seems vain to treat it in the end of an article; still we must try to outline it with at least a few touches.

First, then, the life of the Pal  zoic was remarkable, as compared with that of the present world, in presenting a great prevalence of animals and plants of synthetic types, as they are called by Agassiz—that is, of creatures comprehending in one the properties of several groups which were to exist as distinct in the future. Such types are also sometimes called embryonic, because the young of animals and plants often show these comprehensive features. Such types were the old corals, presenting points of alliance with two distinct groups now widely separated; the old Trilobites, half king-crabs and half Isopods; the Amphibians of the coal, part fish, part newt, and part crocodile; the Sigillari  , part club-mosses and part pines; the Orthoceratites, half nautili and half cuttle-fishes. I proposed, in the illustration in a

Thirdly, extinctions of species occur in every great oscillation of the continental areas, but some species reappear after such oscillations, and the same genus often recurs under new specific forms. Families and orders, such as those of the Trilobites and Orthoceratites, appear to have a grand and gradual culmination and decadence extending over several successive periods, or even over the whole stretch of the Pal  zoic time. Toward the close of the Pal  zoic, while all the species disappear, some whole families and orders are altogether dropped, and, being chiefly synthetic groups, are replaced by more specialised types, some of which, however, make small beginnings alongside of the more general types which are passing away. Our diagram (fig. 4) illustrates these points.

Fourthly, the progress in animal life in the Pal  zoic related chiefly to the lower or invertebrate tribes, and to the two lower classes of the vertebrates. The oldest animal known to us is not only a creature of the simplest structure, but also a representative of that great and on the whole low type of animal life, in which the parts are arranged around a central axis, and not on that plan of bilateral symmetry which constitutes one great leading distinction of the higher animals. With the Cambrian, bilateral animals abound and belong to two very distinct lines of progress—the one, the Mollusks, showing the nutritive organs more fully developed—the other, the Articulates, having the organs of sense and of locomotion more fully organised. These three great types shared

* It seems, indeed, as if the new synthetic forms intermediate between great groups were often large in size, while the new special types came in as small species. There are some remarkable cases of this in the plant world; though here we have such examples as the pines and tree-ferns continuing almost unchanged from an early Pal  zoic period until now.

the world among them throughout the earlier Palæozoic time, and only in its later ages began to be dominated by the higher types of fishes and reptiles. In so far as we know, it remained for the Mesozoic to introduce the birds and mammals. In plant life the changes were less marked, though here also there is progress—land plants appear to begin not with the lowest forms, but with the highest types of the

physical and organic change; going on with regular march throughout the Palæozoic, and then brought to a close to make room for another great succession. This following Mesozoic time must next engage our attention.

We may close for the present with presenting to the eye in tabular form the periods over which we have passed. The table on the opposite page, and

Fig. 4.

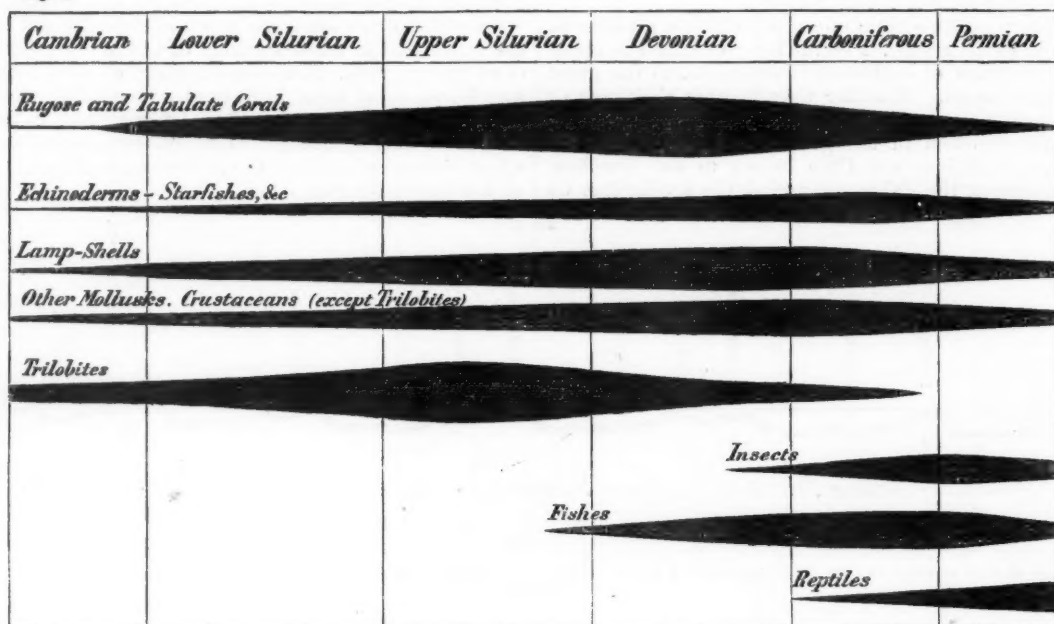


DIAGRAM SHOWING THE ADVANCE, CULMINATION, AND DECADENCE OF SOME OF THE LEADING TYPES OF PALÆOZOIC LIFE.

lower of the two great series into which the vegetable kingdom is divided. From this they rapidly rise to a full development of the lowest type of the flowering plants, the pines and their allies, and there the progress ceases; for the known representatives of the higher plants are extremely few and apparently of little importance.

Fifthly, in general the history tells of a continued series of alternate victories and defeats of the species that had their birth on the land and in the shallow waters, and those which were born in the ocean depths. The former spread themselves widely after every upheaval, and then by every subsidence were driven back to their mountain fastnesses. The latter perished from the continental plateaus at every upheaval, but climbed again in new hordes and reoccupied the ground after every subsidence. But just as in human history every victory or defeat urges on the progress of events, and develops the great plan of God's providence in the elevation of man, so here every succeeding change brings in new and higher actors on the stage, and the scheme of creation moves on in a grand and steady progress towards the more varied and elevated life of the Modern World.

But, after all, how little do we know of these laws, which are only beginning to dawn on the minds of naturalists; and which the imperfections of our classification and nomenclature, and the defects in our knowledge of fossil species, render very dim and uncertain. All that appears settled is the existence of a definite plan, working over long ages and connected with the most remarkable correlation of

the diagram (fig. 3), mutually illustrate each other; and it will be seen that each age constitutes a cycle, similar in its leading features to the other cycles, while each is distinguished by some important fact in relation to the introduction of living beings. In this table I have, with Mr. Hull,* for simplicity, arranged the formations of each age under three periods—an older, middle, and newer. Of these, however, the last or newest is in each case so important and varied as to merit division into two, in the manner which I have suggested in previous publications for the Palæozoic rocks of North America.† Under each period I have endeavoured to give some characteristic example from Europe and America, except where, as in the case of the coal formation, the same names are used on both continents. Such a table as this, it must be observed, is only tentative, and may admit of important modifications. The Laurentian more especially may admit of division into several ages; and a separate age may be found to intervene between it and the Cambrian. The reader will please observe that this table refers to the changes on the continental plateaus; and that on both of these each age was introduced with shallow water, and usually coarse deposits, succeeded by deeper water and finer beds, usually limestones, and these by a mixed formation returning to the shallow water and coarse deposits of the older period of the age. This last kind of deposition culminates in the great swamps of the coal formation.

* "Quarterly Journal of Science," July, 1869.

† "Acadian Geology," p. 137.

TABULAR VIEW OF THE AGES AND PERIODS OF THE PALÆOZOIC AND Eozoic.

TIMES.	AGES.	PERIODS.	ANIMALS AND PLANTS.
PALÆOZOIC.	PERMIAN.....	Newer. Red Sandstones, Rauchwacke, etc. Middle. Zechstein, or Magnesian Limestone. Older. Conglomerates, etc., Rotheliegendes.	Beginning of Age of Reptiles.
	CARBONIFEROUS	N. Coal Formation. M. Carboniferous Limestone. O. Lower Coal Measures and Conglomerates.	Age of Batrachians.
	DEVONIAN OR ERIAN ..	N. Upper Old Red, Chemung. M. Eifel and Corniferous Limestones. O. Lower Old Red, Oriskany Sandstone.	Age of Fishes.
	UPPER SILURIAN	N. Ludlow, Lower Helderberg. M. Wenlock and Niagara Limestones. O. Mayhill, etc., Oneida Conglomerates.	Age of Mollusks.
	LOWER SILURIAN.....	N. Caradoc, Hudson R. M. Bala and Trenton Limestones. O. Llandello, etc., Potsdam Sandstone.	Age of Algae.
	CAMBRIAN	N. Lingula Flags, etc. M. (Uncertain)... { Acadian, etc.? { Menevian? O. Longmynd, Huronian?	Age of Crustaceans.
Eozoic.	LAURENTIAN	N. Anorthosite, Gneiss, etc. M. Eozoön Limestones, etc. O. Lower Gneiss.	Age of Protozoa.

Tabulate and Rugose Corals, abundant.

Ages of Acrogens and Gynnosperma. And God created great reptiles.

And God said, "Let the waters bring forth abundantly the swarming living creatures."

NATURAL HISTORY GOSSIP.

BY J. K. LORD, F.Z.S.

"BLIGHT."



HE complaint one now hears on every hand is, "Oh! how the winds have 'blighted' everything in the garden!" But the word "blight" has at best but a very vague and indefinite meaning. "My roses are dreadfully 'blighted,'" says A. "The leaves are all curled up, and the buds are destroyed." But the mischief A. refers to is brought about by little caterpillars known as "leaf-rollers." B. says, "Only look at my currant-trees. Why every leaf is 'blighted,' and I shall not have a currant!" B. means that his bushes are infested with *aphides*, or plant-lice. C. told me that, "The 'blight' was terrible on his apple-trees." But on my investigating this so-called "blight," it turned out that C. referred to the larvæ of the "Lackey Moth," which rapidly cause defoliation. Beans and hops are said to be blighted when the *aphides* are thick upon them. It may be interesting perhaps to those who delight in their gardens to give a short history of the "leaf-rollers," and that terrible pest, the *aphis*, alike designated "blight."

The "leaf-rollers," which are so destructive to the rose-bushes, belong to a group of moths called *Tortrices*, a name the larvæ have received from their habit of rolling up the leaves of plants upon which they feed into tubes, which they leave open at both ends. Taking up their quarters in this kind of tunnel, they reap a twofold advantage—first, of being able to escape the sharp eyes of their enemies, and secondly, having a habitation they can devour at leisure. When its house is devoured, the *tortrix* grub moves off to other leaves, rolls them into a tube by means of its silken web, and then eats its house as before.

The *tortrices* are very plentifully distributed in England; even the most unobservant person must have noticed the leaves of the trees, shrubs, and herbs

rolled by these little caterpillars, some of which are very destructive. The *tortrix*, enemy to the rose-trees of our gardens, is a little caterpillar, remarkably frisky when disturbed, wriggling about with extraordinary activity, a habit common to most of the *tortrices*, when dislodged from their leafy gallery. Who that cherishes his roses has not diligently searched for curled-up leaves, and having found a promising looking tunnel, applied pressure, not gentle, with the finger and thumb, till the living inmate is reduced to a shapeless pulp?

Like every other natural habit of animals, this leaf-rolling propensity has its wise object, which is the protection of the enclosed caterpillars from foes, especially birds, which would work fearful havoc among them if exposed. The larvæ of the *tortrices* are, I have said, extremely active; a hungry bird spies a rolled leaf, and with a kind of instinct infers the presence of a fat caterpillar therein, a delicious tit-bit; down he swoops at the tube and inserts his beak into one end; *tortrix*, however, does not exactly understand the fun, so with his usual activity he wriggles out at the opposite end, and gently lowers himself by a silken thread. Our feathered friend becomes perplexed as to the whereabouts of his lunch, and ultimately gives it up as a bad job and makes off to look out for another. The caterpillar, on finding the coast clear, slowly ascends his silken ladder, and having regained his domicile, sits down and enjoys a hearty laugh, if caterpillars ever do laugh, over the very neat way in which he escaped from the feathered bailiff.

The best plan to get rid of these pests is to search out the rolled-up leaves and then to crush the depredator. The larvæ of the different species of *tortrices* have different methods of constructing their habitations—some spin two or three leaves together, some curl up a whole leaf, while others only curl a portion of a leaf; but the leaf-rolling habit is common to all,

and has procured for them their characteristic appellation.

One kind common upon the roses generally manages to enclose a young flower-bud betwixt the leaves, upon which it lives right royally, eating into the delicate heart of the bud. Very soon these destructive caterpillars will undergo their change into the pupæ or chrysalis state, to be followed by the appearance, in a little while, of the perfect moths, which pair, and then the female lays her eggs in a suitable situation for the development of a future offspring.

The eggs of the Lackey Moth (*Bombyx neustria*) are curiously deposited in a compact ring round the twig of some tree; apples and apricots being frequently selected. This year I observed the caterpillars on one branch, numbering about 120, emerged from the batch of eggs on the second of May. The caterpillars spin a web of fine silky material, in which they reside, passing a good part of their time huddled up together in a regular heap. When they are hungry, they march in a kind of procession from out their silken tent and devour the nearest leaves. It is the appearance of this web spun over the leaves of the apple-trees which induces the belief that the trees are "blighted." So soon as the caterpillars are about half-grown, they quit their web, and give up their gregarious mode of living, each caterpillar vagabondising as best suits its fancy, over the general leafage of the tree. By-and-by it changes to a brown chrysalis, and the moth will make its appearance some time in July. The best plan is to look carefully over the fruit-trees, and wherever a web is observed, to cut or break off the branch upon which it is spun, when generally the whole colony of young "lackeys" may be caught napping. Moderate pressure applied with the heel of the boot settles their business for ever and aye.

The Aphis, or "plant-louse," as it is very generally styled, is the pest more especially associated with blight, and people often imagine that the wind has brought them in the course of a night when they observe that their currant and rose bushes are suddenly covered with these pests; but the fact is the aphides multiply so rapidly that their appearance might well be supposed *a priori* to be sudden and in actual legions. The life history of the aphis is very curious, and when explained will serve to account for the impression entertained by many that aphides come with a "blighting" wind. Last summer was an exceptionally hot one, and let us suppose that at the close of the year a female aphis (and she is winged, recollect) deposited her eggs upon the branch of a currant-bush. I specially refer to the currant-bushes, because they have suffered dreadfully from the attacks of aphides this summer. As soon as the leaves appear a young aphis escapes from out the egg. It is a six-legged, ugly little creature, devoid of wings. It undergoes no change or transformation, but simply grows and moults, until it attains its mature form. This form of the aphis never has wings, and is in point of fact an immature female. Very soon after escaping from the egg this organism begins to produce a family of aphides exactly like herself, without any access to the male aphis. The curious part of the affair is, that they are not eggs from which the young aphides are produced from this immature female, but "buds," so to say, which are developed from the partially developed ovaries. Each bud, as soon as it is formed, drops into a special cavity intended for its reception,

where it assumes the exact counterpart of the parent, and is born in a living condition. Now, if the parent aphis produces a hundred young ones, each one of these begins, directly after its appearance upon the leaf, to produce "buds," as did the parent, so that a single aphis might in a summer be the producer of billions of others.

By-and-by the chilly weather ushering in winter comes on, and then another change takes place. The brood which may then be existing undergo a regular metamorphosis, and instead of producing buds change into winged males and females. The female finally deposits her eggs upon the plant best adapted to the future welfare of her offspring in the year to follow, which eggs remain unharmed throughout the winter. The best plan of getting rid of these pests is to well syringe the trees infested with soap and water, weak tobacco water, or Gishurst's compound. Rubbing them off with the aphis brushes, or with the finger and thumb, is likewise an effective plan.

WHEAT-DESTROYING GRUBS.

Small yellowish-white grubs or larvæ, about two lines in length, this year have caused fearful havoc amidst the young wheat crops in Scotland and elsewhere. They eat the young plant through near where the stem joins the root, but in so insidious a manner that their presence is scarcely to be suspected until the green blades of the young wheat turn yellow, droop, and die. I procured some of the larvæ causing this terrible loss to the farmer direct from Scotland, and it may be of interest, if not of direct utility, to describe the fly into which these wheat "maggots" develop. Being thoroughly acquainted with the habits and every-day doings of an enemy is a great help towards finding means for his destruction.

The perfect insect belongs then to the order *Diptera*, or two-winged flies; the family, *Muscide*; and genus *Anthomyia*. Although a tiny fly it has a long name (*Anthomyia ferrugineo-vittata*). There are a great many species belonging to the genus *Anthomyia*. The larvæ of some live in cow-dung, others work dire havoc amongst the roots of various garden productions, such as carrots, onions, radishes, young cabbage plants, and lettuces, while rotten leaves and decaying vegetable matter in general are the chosen abodes of very many, whereas the larvæ immediately under consideration attack the young tender plants of wheat.

A CRUISE IN A WHITEBAIT BOAT.

I know of nothing more disagreeable than having the traditions one has clung to from boyhood nipped in the bud by the practical hand of some seeker after science. Who, I should like to know, cares to be told that "turtle" soup is a decoction of cold-blooded reptile, or that venison hung the right time to acquire tenderness and flavour is simply animal matter undergoing a chemical change, and that the silvery whitebait we, at this time, so thoroughly enjoy when nicely cooked with just a dash of cayenne, are neither more nor less than the "fry" of the herring. I have always eaten and enjoyed these tiny dainties, in the pleasant belief that a whitebait was a whitebait, a faith I still cling to, in the face of all that learned ichthyologists may say to the contrary.

One is hardly *a priori* disposed to believe, in these

go-a-head days of scientific research, that no person can, with any degree of certainty, answer the oft-repeated question, "What is a whitebait?" My own impression has always been that a whitebait was quite as well known, and every bit as easy to recognise, as a salmon, a cod, or a turbot; but far from it, for the learned in fish at once upset my creed by positively stating that there exists no such "fish" as a whitebait, so called by Yarrell (*Clupea alba*), who, in writing about its habits, thus says: "The whitebait differs materially from all the British species of *Clupea* that visit our shores or our rivers. From the beginning of April to the end of September this fish may be caught in the Thames as high up as Woolwich or Blackwall every flood tide in considerable quantity. During the first three months of this period neither species of the genus *Clupea*, of any age or size, except occasionally a young sprat, can be found and taken in the same situation by the same means." But there are other writers of more recent times who now maintain that the so-called whitebait is made up of the young of other fish, while there are those again who say they are herring "fry."

To satisfy my own mind upon this vexed question, I have recently made expeditions in the boats employed in catching whitebait for the market. Not long ago I stood alone upon the pier at Greenhithe in the early morning, awaiting the fisherman who was to row me in his skiff on board the whitebait fishing-boat. A more lovely morning I have seldom seen. The sun was not as yet visible; but heralding his advent, there came up a grey ghostly light from the sky-line, that seemed to peep into the world below as though to note if everything was in its proper place. The sun soon after rapidly made his appearance, and with a brilliancy nearly equal to that I have witnessed on the Arabian deserts, where I have seen him come in the early morning apparently from out the sand. No sooner was the sun visible than the rooks in the trees close by croaked their hoarse good-mornings; the skylarks rising from the dewy herbage burst into rich melody, the cuckoo's song came faintly from the distance; while below me the splash of the sculls in the still water reminded me that the skiff was close at hand. When we reached the fishing-boat the tide was ebbing fast, and the whitebait net was set.

The net employed is about twenty feet in length, gradually tapering from the mouth to the small end, or "purse," which is not more than three inches in diameter, and so fine in the mesh that a shrimp cannot get through it. The mouth of the net—about four feet wide—is nearly square, and ingeniously "rigged" to crossbeams of timber that keep it extended to its full width. Whilst fishing, the boat is anchored in the tideway, the net is lowered to a depth of about four feet, and the purse then is drifted back astern of the boat, and every living thing that enters at the net's mouth is impounded in the purse. By the aid of a boat-hook the fisherman hooks the purse into the boat, unties its end, and empties its contents upon a kind of shelf erected for the purpose. This process is repeated about every ten minutes so long as the fishing continues. The proceeds of one haul will be sufficient for description. First come the silvery little fish the fishers so carefully select and designate *bait*, and regarding the paternity of which so much discrepancy of opinion exists. These fish varied much in size, from six inches long to one-

twelfth of an inch. These very minute fish were evidently not long from out the egg. Now it was only the very small and intermediate sized fish that were retained, the larger ones being again returned alive to the Thames. Those picked out for sale are called "smig-bait." Then we caught sprats, but it was very easy to distinguish them from the "bait," sticklebacks, "pole-wigs"—so the fishermen call them, but properly the speckled goby—shads, flounders, and lamperns. The time was when as many as twelve hundred thousand lamperns were annually taken in the Thames, and sold to the Dutch as bait for codfish and turbot. They have been sold at so high a tariff as £8 per thousand.

It will be of interest if I note the contents of the stomach of one of the whitebait I opened, which was about five inches in length. The greedy fellow had devoured twenty-one squillæ, or "mantis crabs," and three small shrimps. So far so good. Now it may be asked what I have to adduce in support of my assertion that a whitebait is a whitebait. They are not young shads, certainly, for the shad we caught could be as easily picked out from amongst the "bait" as a pig from a flock of sheep. And this applies with equal force as regards the sprat. If they be young herrings, how comes it that a great proportion of "bait" caught had only just escaped from the egg? Surely no one believes that herrings have just spawned in the muddy Thames? And if they have not, whence come these baby herrings, if such they be? It is impossible to believe that fish so young and fragile could have made their way up the Thames as high as Greenhithe from the sea. Hence the fair deduction is that they were hatched from the egg near where they were caught. Granting this, then they are most assuredly not young herrings, but the young of mature whitebait that had spawned early in the year. My experience, acquired "aboard" the whitebait boat, has but the more firmly convinced me that the whitebait is a distinct species, entitled to its name (*C. alba*), and not the young of the herring, or any other fish. It is disagreeable, to say the best of it, to imagine that one is devouring by the score embryo bloaters when enjoying the crisp, toothsome whitebait at a Greenwich dinner.

Varieties.

SAVINGS-BANKS.—The National Debt Commissioners certify that on the 24th of December there stood to the credit of the (trustee) savings-banks of the United Kingdom £37,827,826, and of the post-office savings-banks £14,947,484, making a total of £52,775,310.

TRADE BETWEEN GREAT BRITAIN AND NEW YORK.—In 1870 the British entries reached 2,000 vessels, of 1,618,972 tons, and the clearances 2,034 vessels, of 1,625,330 tons.

WONDERFUL RELICS.—A Hungarian Roman Catholic wrote to the *Presburg Gazette* a curious account of a visit he paid to the church of St. Augustine, in Rome. "After walking for half an hour," says the writer, "through streets uglier and dirtier than any that could be found in our small Hungarian towns, I reached at last the church of St. Augustine. When I entered there appeared to be no one in the building, but an old barefooted sacristan soon appeared and offered (of course, for a small consideration) to let me see the marvellous relics the church possessed. Having conducted me into the sacristy he showed me, on a rich velvet cushion enclosed in a small glass case, the cord with which Judas Iscariot had hanged himself. My cicerone maintained the relic to be authentic, and I could not hurt his feelings by an expression of doubt. Another glass case contains

a wing of the Archangel Gabriel. I learned on inquiry that Pope Gregory VII had obtained this gift from the angel by his prayers, and my guide informed me, with a look of deep significance, that he knew a pious man, the possessor of a feather from this angelic wing, who would be happy to dispose of it in favour of another devout man. As I did not take the hint, we continued our examination of the reliquary. I was next shown the comb of the cock that crowed when Peter denied his Master, then the staff with which Moses divided the waters of the Red Sea, and afterwards the beard of Noah. My cicerone took care to inform me, every now and again, that in consideration of my being a 'pious man,' I could obtain a small portion of these invaluable relics at a very moderate price." The *Presburg Gazette* adds to this letter, by way of postscript: "Our worthy correspondent does not seem to have been shown what, in our opinion, is the pearl of the collection in question: it is one of the steps of the ladder on which Jacob, in his dream, saw the heavenly hosts ascending and descending."

MOLTKE'S REPLY TO A POET.—Count Moltke says in a letter to the poet Oscar von Redwitz, who addressed to him his "Song of the New German Empire":—"To the poet it is permitted to be prodigal. He sows with full hands diamonds and pearls, the stars of heaven and the flowers of earth, and in the same spirit he bestows his praises. In this sense only can I receive your song comparing me to the great men of the past. These have been great also in adversity, and especially in adversity. We have had nothing but successes. Let it be called chance, destiny, fortune, or the ways of Providence—men alone have not done it. Conquests so great are essentially the state of things which we can neither create nor dominate. Pope Adrian had the following words engraved on his tomb:—'How different is the action of even the best of men according to the times in which he lives! More than once the most capable has failed owing to the invincible force of circumstances, while a less capable has been carried by it to success.' If I see myself constrained, not by a false and vain modesty, to consider as not deserved part of the praises bestowed on me, I am not the less indebted for them, for verses like yours may last longer than many a bronze or marble monument."

CHURCH-BUILDING IN THE CITY.—In former times, little bribes (*douceurs* was the softer name) were paid to facilitate the progress of public buildings in the City. After the great fire of 1666, no effectual steps seem to have been taken for some years to rebuild the church of St. James, Garlick Hithe; but it was eventually rebuilt by Sir Christopher Wren. In the churchwardens' accounts, the first item appears in 1676, when twenty guineas, at £1 1s. 8d. a piece, amounting to £21 13s. 4d., were paid to "a gentleman to promote the rebuilding our church," and £2 12s. 6d. was given to his servants. During the next four years there are several entries for "Wateridge," and going to Sir Christopher Wren, and two guineas paid to Mr. Stopford, his clerk, to urge him on with the works. In 1682, at its completion, there is a charge for "two bottles of sherry and pipes, at the opening of the church, 3s. 4d.," and "wax links to enlighten my Lord Mayor home, 4s. 6d." Tobacco is charged for a short time after in the account of the expenses attending the bishop's confirmation.

SUSSEX CENTENARIANS.—In the preface to "The Worthies of Sussex," by Mark Antony Lower, F.S.A., a list is given of cases which he considers well authenticated: a Mrs. Constable, widow of the Rev. Richard Constable, rector of Cowfold, died in 1860, aged 101. The Rev. Dr. Totty, incumbent of Ichingham, died at 102, preserving his faculties unimpaired, having written a few days before his death a Latin inscription to commemorate the restoration of his church. With Mrs. Mary Turner, of Ditchling, Mr. Lower conversed "when she was nearly 100 years old, and she retained her memory and other mental faculties in a remarkable degree." A labourer of the same parish, named Howell, attained the age of 102. Of cases at less recent periods the following are remarkable:—In 1529 died Henry Jacobson, of Lewes, aged 124. He was born in 1405, fought at the battle of Agincourt, married four times, and had eight children; he had, when 120, a perfect recollection of the accession of Henry V. The registers of Chiddingfold record the burial of George Bennett, who died in 1659, aged 112; and of Dorothy Earle, who died in 1645, aged 106. Anne Imms died at Ringmer in 1831, aged 103; she used to say she had shortened her life by drinking strong tea! In Battle Churchyard is an inscription to the memory of Isaac Ingall, who died at the age of 120. Phoebe Hessel died at Brighton in 1821, aged 108, a pensioner on the bounty of George IV. She had served in her youth, disguised as a man, in the 5th Regiment of Foot, and was wounded at Fontenoy. At All Saints, Chichester, Anthony Barnarde, painter, was buried in 1619, aged 105. At Parham in 1597, Richard Tupper, 105. In

1734 died at Broadwater, John Burnet, aged 109. He had six wives, three of whom he married and buried after he was 104 years old. Mr. Lower affirms that no county of England can show a higher standard of longevity than Sussex.

SUBMERGED FOREST IN THE BED OF THE THAMES.—At Plumstead we find a notable example of the great geographical changes which have marked the history of the valley of the Thames. In constructing the Southern Outfall Sewer, in Plumstead Marshes, an old forest bed, several miles in extent, was discovered by the excavators. It was found lying at a depth of twenty feet below high-water mark. It passes under the bed of the river, and it prevails generally under the marshes between the River Lea on the north shore and Erith on the south. The tree-trunks are found lying flat in immense numbers; and the peat is almost exclusively composed of the twigs and leaves of trees. At the base of the peat the stools of trees—of yew and oak and pine—were found rooted, in some cases, in the gravel. With our own eyes we may see the evidence of great catastrophes destroying old land surfaces and the inhabitants of the country, upheaving the bed of a great river, and then burying a forest beneath its waters. At Plumstead we may realise in the scene of destruction before us the picture which has been drawn by the poet—

"The forest trees
So massy, vast and green in their old age,
Are overtopped;
Their summer blossoms by the surges lopp'd
Which rise, and rise, and rise."

For it is here at Plumstead Marshes that an ancient forest, many miles in extent, has been cast down, so that the waters of the Thames now flow over it. Thus near to London are some of the most typical and impressive of geological phenomena. It is of changes such as these that the poet sings—

"Where rolls the deep, there grew the tree."

—From "Rambles round London: Rural and Geological," by Henry Walker.

CRIMINAL LITERATURE.—Low literature appears to be taking a new direction. If it be slightly less meretricious and of a somewhat less criminal character than formerly, it is, perhaps, becoming more dangerous. Democracy the most democratic is advocated, and under the guise of tales of fiction, authors insidiously, and for sinister purposes, endeavour to set class against class. These publications are only purchased by the lowest orders of the community, and though respectable persons affect to look upon such literature with contempt, they will surely not continue so to do when the nature of it is represented to them? The favourite theme is the extinction of the upper and well-to-do classes, power being transferred to artisans; the right of property is openly challenged, equality of possessions demanded, and confiscation of land strongly advocated. These are but a few of the ideas which are now being taught to the rising generations of the poorer classes. No wonder, then, that disrespect exists among servants, and that these persons have not a proper appreciation of the laws of *meum* and *tuum*. Every well-regulated mind will denounce such publications, which are for the most part confined to novels issued in weekly penny numbers. It is bad enough to know that there are among us men who will write, print, and publish such mischievous writings; but the combined exertions of all these would be useless if news-vendors and booksellers would decline to be the means of circulating them.—*The Stationer*.

OUR FOREIGN TRADE IN BOOKS.—The printed books exported from the United Kingdom in 1869 weighed 59,291 cwt., and were of the value of £676,459. The books imported weighed 11,463 cwt., and were of the value of £134,963, so that we send forth five times as much as we receive. Ten years before—in 1859—our exports of books reached only 33,915 cwt., of the value of £483,399; and our imports 6,520 cwt., of the value of £91,241. In 1869 we exported to the United States 19,675 cwt. of books, of the value of £205,885; to Australia, 17,056 cwt., of the value of £148,320; to British India, 2,802 cwt., of the value of £44,146; and to Egypt, 4,427 cwt., of the value of £79,127; to British North America, 5,992 cwt., value £62,713; to British possessions in South Africa, 1,467 cwt., value £21,230; to the British West Indies, 845 cwt., value £9,676; to France, 3,345 cwt., value £27,085; to Hamburg, 1,073 cwt., value £16,814; to Holland, 793 cwt., value £12,377. Our imports of books in 1869 included 3,629 cwt. from France, of the value of £48,509; 2,985 cwt. from Hamburg, value £41,180; 363 cwt. from Bremen, value £4,126; 1,442 cwt. from Holland, value £13,477; 1,293 cwt. from the United States, value £10,277.